

II. Listing of the Claims

This listing of claims will replace all prior versions and listings of claims in this Application. This listing does not make any changes to the claims. It is provided solely for the convenience of the Examiner. Note that this listing of claims is in a proper format for a reissue application, according to 37 CFR 1.173.

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Original) A method of surgery comprising the steps of removing a vertebral disc from a patient's spine, forming holes at precisely predetermined locations in bone structure adjacent the location of the removed disc, tapping the holes to form a female thread in each hole, and threadably implanting an anchor into each tapped hole, thereby creating reference points located precisely with respect to the patient's spine, forming concave surfaces in adjacent spinal bone, and inserting between the formed bone surfaces a vertebral disc endoprosthesis including confronting concaval-convex supports, each support having an exterior convex surface adapted to mate with the adjacent formed concave spinal bone surface, the endoprosthesis further including a resilient body element interposed between the concaval-convex supports, and thereafter affixing the concaval-convex supports to the adjacent bone.
5. (Original) A method of surgery according to claim 4 further including the step of temporarily locating a bone surface milling jig at the site of the removed vertebral disc by means of said anchors prior to implanting said disc endoprosthesis.

6. (Original) A method of surgery according to claim 4 further including the steps of attaching a screw to each concaval-convex support and screwing said screw into the implanted anchor.

7. (Original) A method of surgery according to claim 4 further comprising the steps of identifying a damaged resilient nucleus body element or annular gasket in an implanted endoprosthesis, removing said damaged nucleus body element or annular gasket from the endoprosthesis and inserting a new, undamaged nucleus body element or annular gasket into the endoprosthesis without removing the concaval-convex supports from the patient's spine.

8. (Original) A method of spinal surgery comprising the steps of forming mounting holes in one or more vertebral bodies of a patient's spine; utilizing said mounting holes to mount a bone mill on a patient's spine; milling confronting bone surfaces on and in the patient's spine to a predetermined surface shape; removing said mill; and thereafter mounting a vertebral disc endoprosthesis having a predetermined outer surface shape by means of the original mounting holes so that outer surfaces of the vertebral disc endoprosthesis mate precisely with the previously milled bone surfaces.

9. (Original) A method of endoprosthetic discectomy surgery comprising the steps of receiving information about the size, shape and nature of a patient's involved and proximate normal natural spinal vertebral bodies and natural spinal vertebral discs from known imaging devices, thereafter constructing at least one vertebral disc endoprosthesis comprising a resilient disc body and concaval-convex elements at least partly surrounding the resilient disc body, removing at least the involved, natural spinal discs from the patient's spine, forming concave surfaces in adjacent spinal bone, and thereafter implanting the vertebral disc endoprosthesis in the patient's spine.

10. (Cancelled)
11. (Cancelled)
12. (Cancelled)

13. (Previously Presented) A method of surgery comprising:
forming concave surfaces in endplates of confronting vertebral bodies;
inserting between the formed concave surfaces an intervertebral disc endoprosthesis
wherein the intervertebral disc endoprosthesis comprises: L-shaped supports wherein each of the
L-shaped support comprises an exterior convex surface adapted to mate with one of the formed
concave surfaces; and a resilient body interposed between the L-shaped supports; and
implanting at least one anchor in at least one of the confronting vertebral bodies, wherein
the implanting is located in an anterior surface of the at least one of the confronting vertebral
bodies.

14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)
21. (Cancelled)
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)
25. (Cancelled)
26. (Cancelled)
27. (Cancelled)
28. (Cancelled)
29. (Cancelled)

30. (Previously presented) A method of surgery comprising:
removing at least a portion of a natural spinal disc from between confronting vertebral
bodies;

forming partially hemispherical surfaces in endplates of the confronting vertebral bodies,
the partially hemispherical surfaces being different from a natural surface of the endplates; and
inserting between the formed partially hemispherical surfaces an intervertebral disc
prosthesis comprising confronting supports, each support having a partially hemispherical
exterior surface adapted to mate with one of the formed partially hemispherical surfaces, wherein
the supports are capable of movement relative to each other after the prosthesis has been inserted
between the formed partially hemispherical surfaces;

prior to forming the partially hemispherical surfaces in the vertebral body endplates,
implanting at least one anchor into a hole having a predetermined position in an anterior surface
of at least one of the confronting vertebral bodies; and

affixing a bone surface milling mechanism to the at least one anchor.

31. (Previously Presented) The method of surgery according to claim 30, wherein the
partially hemispherical surfaces are formed using a milling jig.

32. (Cancelled).

33. (Previously Presented) A method for inserting an intervertebral disc prosthesis having a first and second surface, the method comprising:

after removal of an intervertebral disc, forming a first indentation in a first endplate of a first vertebral body, the first indentation having a middle portion and a circumferential rim such that the middle portion is deeper into the first vertebral body than any part of the circumferential rim;

fixedly mating the first surface to the first indentation of the first endplate of the first vertebral body, the first surface having a shape that conforms to the first indentation; and

fixedly mating the second surface to a second vertebral body.

34. (Previously Presented) The method of claim 33 wherein the first indentation is formed by attaching a milling jig to either the first or second vertebral body and milling the first indentation.

35. (Previously Presented) The method of claim 33 wherein the first indentation is concave about multiple planes and the first surface of the intervertebral disc prosthesis has a convex shape.

36. (Previously Presented) The method of claim 33 wherein the first and second surface are capable of relative movement after being mated to the first and second vertebral bodies, respectively.

37. (Previously presented) The method of claim 33 further comprising:
forming a second indentation in a second endplate of the second vertebral body, the second indentation having a middle portion and a circumferential rim such that the middle portion is deeper into the second vertebral body than any part of the circumferential rim.

38-44. (Cancelled).